INNOVATIVE PROJECT PROCUREMENT IN THE QUEENSLAND GOVERNMENT: THE WOODFORD CORRECTIONAL CENTRE

T. Heldt
K.D. Hampson
Queensland University of Technology, Brisbane Australia
S. Murphy
Department of Public Works and Housing, Brisbane, Australia
P. Wood
R. Deck
Concrete Constructions, Brisbane, Australia
S.N. Tucker
CSIRO, Melbourne, Australia

Abstract

Much of the effort of the construction industry is directed towards the provision of services and products, many with substantial long term implications. Systems and procedures have evolved over centuries to provide these services and products, but inefficiencies have developed. One strategy for improving the efficiency of the construction industry is to restructure the systems and procedures which deliver projects so that improved benefits to the end users are provided. In this paper, contemporary systems and procedures for the delivery of projects are reviewed and the roles of the major stakeholders are examined. The recent construction of Woodford Correctional Centre in Queensland is reviewed as a case study in restructuring the delivery process and the lessons learned from this successful project are summarised.

Keywords: Innovative project procurement; design-build; contract forms; correction centre; prison; provision of public services.

Tim Heldt is a lecturer in the school of Civil Engineering at the Queensland University of Technology after a number of years in the construction industry.
Keith Hampson is Director of Research and Senior Lecturer in the School of Construction Management and Property at QUT.
Steve Murphy is a Principal Project Officer with the Building Division, Department of Public Works and Housing. He is a qualified Civil Engineer and has 30 years experience. in the Department in engineering, contracts and project procurement.
Peter Wood is a senior architect with Project Services, a business unit of the Department of Public Works and Housing. He has worked in the department for 25 years, more recently gaining experience in the design and construction of Correctional Centres.
Rob Deck is a Senior Design Manager for Concrete Constructions in their Brisbane office. He has 15 years experience in the building industry.
Selwyn Tucker is a Project Manager at the CSIRO Division of Building, Construction and Engineering. His diverse and active research interests include process re-engineering in the construction industry.

INTRODUCTION

In 1995 a Commonwealth Industry Commission report reviewing Commonwealth/ State Service Provision provided a valuable insight into delivery of corrective services in Australia. It showed, for example that, in 1994/95 Queensland

- had the lowest direct cost/prisoner/day for both Secure and Open custody;
- had an escape rate below the national average; and
- had the lowest cost/offender/day for Community Supervision.

Against this record the Queensland Corrective Services Commission (QCSC) continues to seek to further improve the cost-effectiveness and efficiency of their service provision and to test the public cost of providing this service against the open custodial services market. The (QCSC) is a statutory authority established in 1988. The QCSC is managed by a community-based board consisting of a Chairperson and seven Commissioners. QCSC introduced private sector custodial service providers into the supply side of the correctional system at state owned correctional centres at Borallon (near Brisbane) in 1987 and Arthur Gorrie (also near Brisbane) in 1989 in an attempt to reduce the operating costs in the delivery of correctional services in Queensland.

Direct cost comparisons for service provision had never been possible previously because of a lack of a *level playing field*. In 1995, the QCSC competed against two of the largest private sector providers of custodial services in the world for the right to design, construct and operate the Woodford Correctional Centre. The QCSC bid was judged to offer the best value for money and quality of outcome for the tender price. The QCSC consortium was consequently awarded the contract to design, construct and operate the facility for a period of ten years.

The project involved a number of innovative approaches to procurement, these are described in this paper. From the perspective of 'innovation', it is considered of value to examine the procurement and the supply sides of the operation as being distinctly separate aspects, as each presented abundant opportunity for innovation in project delivery. This paper addresses them separately and attempts to highlight their difference.

PROJECT PROCUREMENT SYSTEMS

The project procurement system refers to the method of organising the production of the project (i.e., the design, documentation, construction, and commissioning of the project) and embodies the risks, returns and responsibilities assigned to the contracting parties. Procurement systems can be categorised into internal and external systems. *Internal* project procurement includes:

- Traditional contract systems;
- Day labour systems; and
- Construction management.

External project procurement includes:

- Agency or professional systems;
- Contractual or commercial systems;
- Total development systems; and
- Managing contractor.

Both categories include "management systems" whereby the party with the primary responsibility for project procurement manages and co-ordinates the various functions required to complete the project.

In *traditional contracting systems*, the client retains full responsibility for controlling and co-ordinating the production stages of a project using a balance of internal resources, consultants and contractors. The various stages are carried out sequentially. However more recently, the procedure has been modified so that design and construction activities are overlapped to allow parallel development to occur. This allows an earlier start to construction activities (often referred to as "fast-tracking") so that benefits of traditional contracts are coupled with enhanced time performance. The contractual risk under the traditional contract method rests primarily with the contractor. Hence, the potential for contract variations, extension of time claims and contractual claims is higher and reflects the comprehensiveness of the original client brief. Tenders are often won on the basis that variations and claims will ensure the profitability of the contract. The client bears a certain degree of risk consequent upon the performance of consultants and project team members (Zaheeruddin 1994).

Under *day labour systems*/*construction management* the client executes total control and co-ordination over a project and no main construction contract is let. Construction is performed by a mix of the organisation's workforce and subcontractors.

Overall responsibility for the delivery of a project can alternatively be placed in the hands of an external organisation (*agency or professional systems*) which acts in a professional capacity as an agent of the principal. The selected organisation provides a comprehensive project-related management service to the principal, whose role is largely delegated to a project control group. This method is used mainly where the principal does not possess sufficient resources or in-house expertise to manage project procurement.

Unlike the agency or professional systems, *contractual or commercial systems* (such as design and construct) require the external organisation to act in a contractual capacity with a commercial interest in the project, not to act merely as an agent of the principal. The opportunity for a greater commercial interest provides additional scope for innovation by the supplier. These methods generally demand an extensive and ongoing involvement on the part of the client, this input being essential to ensure that the client's interests are adequately safeguarded throughout all project stages (Zaheeruddin 1994).

ROLES OF PROJECT STAKEHOLDERS

The main stakeholders in a construction project are:

- Client/owner;
- Consultants (detailed planners);
- Regulators (project approval bodies);
- Constructor (contractors and sub-contractors);
- Users; and
- Public.

Consultants normally provide services that facilitate the planning and direction of a project. However, they have a subordinate role to clients and contractors in directing projects. Regulators normally adopt a passive role in project development. They are influenced by government decree, statutory requirements, public perceptions and standards recommended by professional associations. Their role has been to prevent inappropriate developments (and aspects of developments) as perceived by the broader community. Consequently regulators act to constrain and modify project directions rather than drive projects in the conventional delivery process. It is in this area which government has great potential for innovation by creating an environment conducive to development in partnership with, or wholly by, private funding providers.

Constructed facility end users have historically had little capacity to drive or direct projects. Their capacity to influence project outcomes has been directly related to their capacity to have direct influence on clients, constructors and regulators. Clients are the initiators of projects and therefore provide the major direction and impetus to the project, so their role is paramount. Contractors, as the main service providers to the client also play a significant role in the overall direction and development of projects.

While there may be a number of organisations involved in the development of projects, teamwork between individuals in these organisations is the major driver for project success. The different set of goals and objectives arising from the diverse group of individuals involved in managing major construction projects should be clearly enunciated and understood by the senior management team. This should allow project goals and corporate goals to be better aligned.

Role of client in procurement

Ultimately project decisions lie with the client. Initial decisions such as project scope and definition are made by the client and subsequent selection of an appropriate strategy to deliver the project (choice of procurement system) also lies with the client. The procurement method chosen depends on project size, availability of funding with time, risk sharing and complexity. One of the most fruitful areas for innovative project delivery is the form of procurement. Client involvement and ownership is very important and can allow substantial administrative and contractual benefits. The delicate balance is between probity, accountability, intellectual property and profitability.

Throughout the process, interpersonal relationships influence the success of the project. The client's project manager must engender a positive attitude throughout the project. They must also have the management strength to maintain control on what is a very dynamic process. It is important to recognise the role of the individual and in some cases to build the project team around key personnel, rather than the other way around.

Role of Contractors (Suppliers)

While clients generate the need for project development, it is the construction suppliers (contractors) who physically produce the project. Thus contractors are arguably the most aware of potential improvements to the project development process (including procurement method). However, three principal barriers act to inhibit process innovation from the contractor's perspective (Hampson 1997):

- *Financial commitment*: Trying something different requires financial commitment associated with some increased level of risk. Unless there can be some assurance that the innovation is self-funding or transferable across projects within the company it will require some financial support from the client to make it worthwhile.
- *Time*: Usually a construction firm would commit some of its best people to developing new ways of doing things. Generally though, with today's construction organisations running so lean, these people are in demand for a host of other reasons as well.
- *Intellectual property*: There is seen to be three components of ownership of construction innovation. The first ends up belonging to the industry generally. In the second, ownership resides with the client, and the third is contracting firm-specific. The high level of dispersion acts as a deterrent for substantial investment in construction process innovation by the contractor. Ultimately innovations become dispersed throughout industry with the lack of protection of new ideas and processes, and the movement of people from company to company.

The performance of the individual is very much shaped by the organisational context. For innovation to occur in the construction contractor's organisation, there must be a continual focus on creativity; being encouraged to look at options, persistence and value communicated throughout the process. One important source of innovations is the subcontractors because they are a constant source of fresh approaches. However, contractors must establish an appropriate culture to encourage the development of innovation on their projects. This in turn usually requires the client to also be supportive of innovation.

In some cases, specialisation can also act as a focus for innovation. The construction industry has a tendency to partition itself into clusters of skills or competencies. For example, some local contractors are very focused on constructing concrete pavements. They have the equipment, the techniques and the skilled people in this area. This specialisation allows teams to better understand the issues involved with a particular type of work, which can lead to focused innovation. Companies are less likely to invest in innovative process technology where other firms are already entrenched in market niches.

THE ROLE OF THE CLIENT IN INNOVATIVE PROJECT PROCUREMENT

The role of the client in project development is paramount as, without encouragement, innovation is unlikely to occur. This is particularly true for innovations in the procurement process, since this represents the commercial terms under which other project stakeholders must operate. While contractors may proceed with construction process innovation if encouraged, they have limited capacity to develop procurement innovations beyond suggestions such as enticements for funding assistance coupled with risk sharing. Clients must be receptive to suggestions if they are to have any chance of implementation. Conversely, client-derived innovation to the procurement process can be implemented without consulting potential contractors. In practice, the success of innovation (particularly procurement innovation) relies on strong teamwork and communication between all parties involved, but clients are pivotal to such innovation.

Encouragement of *alternate tenders* for specific projects has been in operation in Queensland since the 1970's where an alternative tender accompanying a conforming tender provides the opportunity for facility suppliers to review building functions in accordance with their own capabilities and experience. The Department of Public Works and Housing has also promoted design and construct contracts for major public buildings. Project briefs stating physical characteristics (e.g. floor area and structural configuration), functional attributes (e.g. air-conditioning and lighting) and quality of finish (e.g. carpets and other fittings) are specified, and tenderers encouraged to provide bids satisfying specified performance criteria based on their specific set of skills and capabilities.

This approach requires that other government departmental clients be clearly aware of both the options available and specific user needs. Each circumstance is case-specific however, often involving a unique solution (e.g. a hospital). Inevitably this process involves higher administrative costs in some phases of the project (e.g. tender assessment). High standards of accountability and probity must also be maintained - and importantly - *be seen* to be maintained in the community. For the majority of cases where the outcome is unambiguous (e.g. standardised police stations) there is seen to be little need to deviate from traditional methods which provide the opportunity for standardised documentation and associated economies.

With the developing trend toward the devolution of accounting responsibilities to individual government service providers (e.g. health, education, police, etc.), it is becoming evident that these agencies have limited expertise in facility delivery and have rarely explored all available options. This may be as a result of a lack of appreciation that alternatives exist,

the level of comfort involved in following the traditional approach, perceived threat to personal employment security, lack of appropriate benchmarks for comparison, and the level of risk inherent in the facility's end-use (e.g. prison or hospital). Innovation in the delivery of constructed facilities has greatest potential benefit at a macro-level by providing alternative means of providing the community service, more than specific micro-level encouragement of innovative construction processes.

In order that clients maximise the innovative potential of projects, they need to pursue the following:

- Clearly identify the essential and preferred needs of the project;
- Communicate the above needs to the industry providers;
- Heed feedback from industry, and incorporate appropriate ideas in tender invitation documentation;
- Articulate essential and preferred project requirements in terms of performance in tender documents;
- Communicate tender evaluation criteria in tender documents; and
- Evaluate bids in accordance with the above.

THE SUPPLIERS ROLE IN MAXIMISING INNOVATIVE POTENTIAL

Opportunities exist for suppliers of construction services, contractors and project managers to introduce innovation to the supply side of project procurement including:

- Structuring of the offer in a manner which represents best value for money for the principal which also provides the best commercial advantage to the contractor, e.g. including alternative financing proposals.
- Forming beneficial long term alliances with appropriate legal and contractual status.

While the supplier is often in a good position to identify such opportunities they (the suppliers) must be proactive in developing, tailoring and promoting them. The client must be presented with such opportunities in an appropriate form and with due consultation with various stakeholders. While it is ultimately the client which must accept such opportunities, the development of such opportunities requires appropriate co-operation and communication with suppliers. This proactive supplier culture of communication and co-operation is not essential with conventional procurement systems, but is vital for the development of innovation in procurement.

WOODFORD CORRECTIONAL CENTRE: A CASE STUDY IN INNOVATION

In early 1995, the QCSC Board called tenders for the design, construction and operation of a 400 (with an option for the facility to be extended to 600) male prisoner facility with maximum and medium security ratings (Figure 1). This facility was to be sited at Woodford in a rural setting north of Brisbane. Tenders were awarded in September 1995 with practical completion due in February 1997. Construction cost was estimated at AUD$54.8 million with total cost over the ten year operating period of AUD$248 million (including design, construction and operating costs).

It is believed that this project is the first of this type to proceed in Australia where the *design*, *construction* and *operation* over a defined period has been awarded as a single contract. Following a public call for expressions of interest, three short-listed invitees submitted conforming bids; two entirely from the private sector and one consortium involving public and private sector participation. No reimbursement was paid for the bid preparation. The successful tenderer was the private/public consortium comprising the Queensland Corrective Services Commission (QCSC) as operator, Concrete Constructions Pty Ltd as the

builder, and Project Services, a commercial business unit of the Queensland Department of Public Works and Housing (PW&H) as specialist adviser and Superintendent. Phillip, Smith Conwell were the architects for the design of the centre, with advice provided by the consortium members.

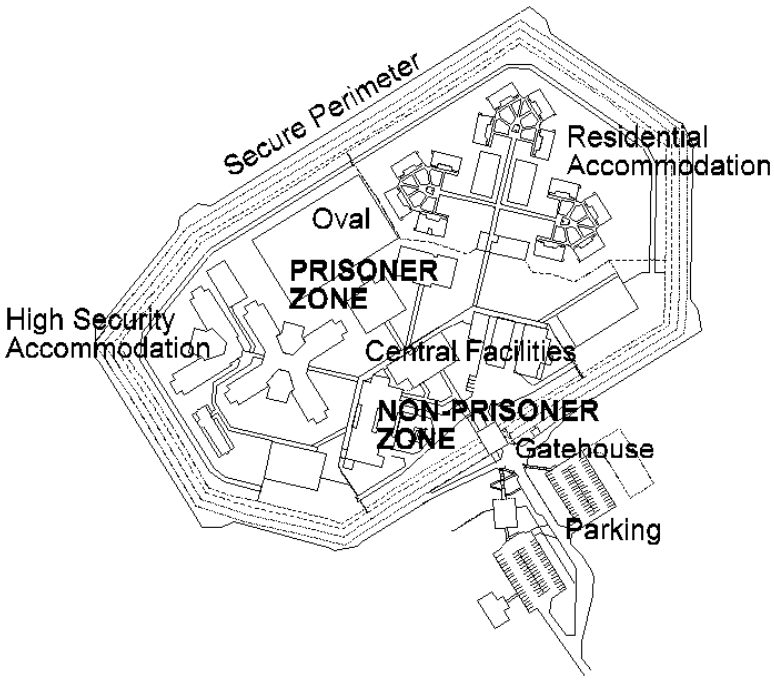

Figure 1. General layout of Woodford Correctional Centre.

Contract negotiations

The impetus for this development was a government and community perception that private industry could do a better job than the public sector. The government of the day had initially proposed that only the private sector be invited to participate, but later allowed joint venture participation via the QCSC. Concrete Constructions proposed the partnering approach for the Woodford project. They prepared a paper titled "Woodford Correctional Centre Contract Negotiation Model" which spelled out the needs, common goals and roles of the respective parties. It described the process of contract negotiation that occurred between the consortium partners, as follows:

- The QCSC engaged Concrete Constructions as preferred builder after a competitive tender process which focused on quality of outcome rather than just price or profit;
- Concrete Constructions and PW&H's Project Services managed the consultant team and procurement of the outline design;
- The QCSC's requirements were defined in a comprehensive technical and operational performance based brief;
- Concrete Constructions provided extensive input during the design process;
- The QCSC "signed off" the outline design;
- The QCSC through PW&H and Concrete Constructions jointly developed a project document and construction contract which was specifically drafted to incorporate the "in good faith" obligations of both parties; and

- The contract sum was agreed as a lump sum.

Apart from the contractual provisions, separate administrative guidelines identified common goals, detailed an escalation procedure for the resolution of emerging issues, and committed the parties to using partnering principles in contract administration (Public Works Committee 1996).

Integration of design, construction and operation requirements

The design of the Woodford Correctional Centre integrated technical requirements and operational philosophy such that design, construction and operational methodologies were inseparable in terms of the tender process. The combination of early input from the client, construction company and facility operator combined to drive the costs of operating this prison to levels substantially less than previously achieved in Australia. It is unlikely that a more traditionally specified approach to procuring the project would have delivered the level of innovation and "world's best practice" which the successful bid achieved. For example, typical average secure custody centres have a prisoner to security staff ratio of 1.7:1 where the Woodford Centre is planned to operate at a ratio of 2.5:1.

One of the most important advances gained through this innovative procurement approach has been the examination of the entire system of operating a correctional centre. The Woodford facility also compares very favourably with other correctional centres (e.g. Borallon and Arthur Gorrie Centres also near Brisbane) which were designed and constructed by the government for private sector operation. The key difference is seen to be the *up-front* involvement of the client and operator (Hampson 1997). A flow chart showing the overall project development process is given in Figure 2.

The QCSC, as the operator of the centre, is able to engage other private and public service providers to carry out certain functions or to provide services within the centre, such as training and activities. QCSC established a community advisory committee to provide a local community interface with the centre. Another key issue in the development and operation of the Woodford Correctional Centre involved re-negotiating employment agreements with QCSC staff. A new industrial award based on this facility's greenfields site status was struck to allow a series of amendments to existing work practices.

Included in the brief of requirements for this facility was inmate rehabilitation and education programs. (One important aspect of QCSC operating the facility was the opportunity provided for the QCSC to retain its custodial service skills and to test them in the market). The initial contract operating period is for ten years with the government scheduled to recall tenders after this initial period, likely on a 5 + 5 year basis.

Outcomes

The project construction was completed ahead of schedule with no cost overrun from the original contract sum. The QCSC indicate that they are very satisfied with the performance of the partners. They also claim that the time taken for this project through its varying stages has set new benchmarks for the delivery of a fully tendered Correctional Centre in Australia.

The construction contractor (Concrete Constructions Pty Ltd) identified three key advantages of the contract negotiation process used throughout this project:

- The owner was able to maintain control over the design process and the procurement of a suitable Outline Design prior to formalising the assignment of documentation and construction risk to the builder;

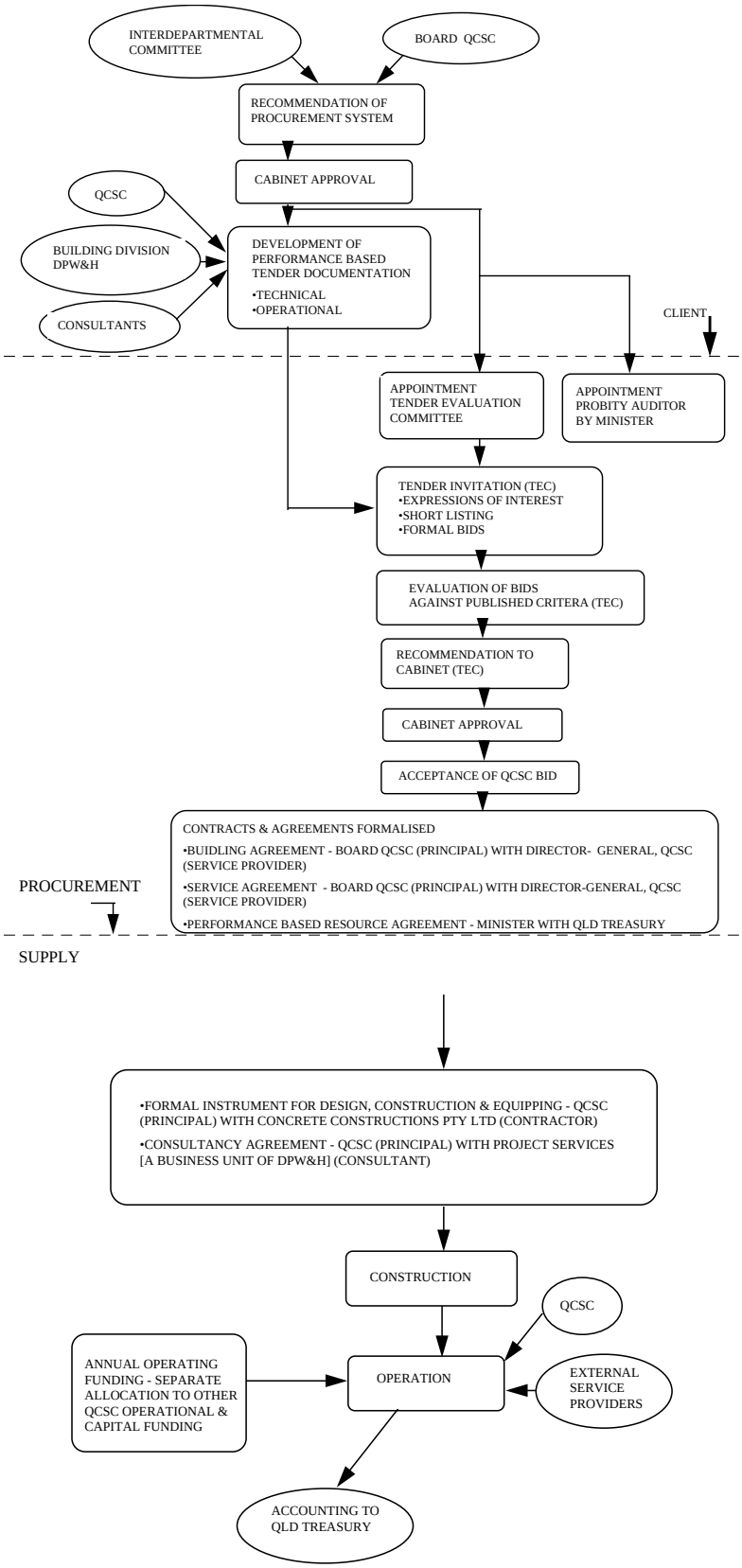

Figure 2. Flow chart for project development of Woodford Correctional Centre.

- The builder clearly understood the scope and nature of the necessary building works prior to agreeing a Contract Sum; and
- The owner was able to remove the gulf which exists between independently prepared design and construction, and benefit from the design management and value engineering skills of the builder.

The contractor believes that the “in good faith” clause incorporated in the project contract is “unprecedented”, in that it "binds the parties to act in a manner which is fair, reasonable and honest", and confirms their agreement to specified common goals and their commitment using partnering principles in administering the contract.

The spirit of co-operation which existed between the consortium partners filtered down to the level of the workers on-site. The project remained free of disputes, both contractual and industrial throughout the 18 month construction period. A Queensland Government Parliamentary Public Works Committee which reviewed the project suggested that the partnering method used had been very successful and recommended that this model be used for other projects (Public Works Committee 1996).

FUTURE DEVELOPMENTS

The future of innovative procurement of public facilities in Queensland, as exemplified by the Woodford Correction Centre, depends on the merits of each case. The 1995 National Competition Policy has pointed the way for increased involvement by the private sector in the provision of public services and encouraged government agencies to be prepared to examine alternative means of delivering public facilities and services. The development of more appropriate and justifiable pre-qualification criteria, risk assessment procedures, and encouraging value for money while encouraging competition is the challenge.

The role of government should be seen not just as a regulator, but also as a facilitator and coach. The role of the Department of Public Works and Housing will be to focus efforts further up the value chain in its dealings with the Queensland construction industry. The future will provide the means to gauge whether Government Departments are able to duplicate the commercial efficiencies of the private sector. However, the current trend towards commercialisation in Queensland and Australia, is seen as one means of sharpening the government’s approach.

Clearly, the trend toward economic rationalism as evidenced by higher levels of private sector involvement in traditional government functions, devolution of financial responsibility to individual community service providers and a focus on International Best Practice in providing these services must be balanced with the social cost of achieving these objectives. Many questions are raised when procurement innovation such as that used for the Woodford Correctional Centre occurs, including:

- When should government service providers contest service provision with private sector providers?
- What is the long term effect on both sectors?
- What are the ground rules under which this competition should occur?

This last question has been addressed by the development of a set of generic guidelines for “in-house” bids by the Queensland State Purchasing Council.

Many real benefits of the more *innovative procurement* approach result from better communication between all project stakeholders from the project delivery to operational phases. As trust subsequently develops between the stakeholders, the “good faith” clause is viewed as less threatening, and the emphasis shifts to “dispute resolution” and “value for money”. This requires a paradigm shift by the whole industry from an adversarial approach, to one of co-operation and mutual respect. This can result in lower risk for all stakeholders.

The Woodford Correctional Centre has been proposed as a model for the development of future projects (PWC, 1996). There is no doubt that all stakeholders have benefited from the innovative approach used. Similarly as noted above, the continued use of this approach will require a paradigm shift by the parties involved in terms of the manner in which they operate. If this approach is to be used as a model, it will have significant implications for the Queensland construction industry as a whole. The integration of this approach with other more conventional approaches will have to proceed carefully, and with industry support.
Some industry stakeholders have concerns regarding the use of this approach (PWC, 1996). It is important that their concerns are not only addressed, but are also perceived to be largely resolved. Broad industry support cannot result without this dialogue, and it should occur at industry level as well as on a project by project basis. While this may present some difficulties, particularly in the short term, the potential benefits to stake holders, the construction industry and the overall economy (Hampson, 1997) are too significant to ignore. The construction industry will not advance unless all parties are prepared to pursue innovations such as those developed for the Woodford Correctional Centre.

While the Woodford Correctional Centre project has been a success for the stakeholders involved, some aspects of the procurement system have been identified as requiring particular attention in future projects utilising such an innovative procurement approach, including:

- Need to communicate the extent and reality of the separation between the Tender Evaluation Committee and the in-house bid Business Unit;
- Require all tenderers to "sign-off" that they are satisfied with the tendering and tender evaluation procedures prior to tenders being called. This suggests the need for pre-qualification of tenders;
- In order to achieve the above, pre-tender meetings are considered essential.

CONCLUSIONS

The acknowledged success resulting from this innovative procurement approach suggests that it has many benefits. The procurement approach used for the Woodford Correctional Centre can be further developed and provide substantial benefits for all project stakeholders. This will require a paradigm shift for the industry as a whole, away adversarial relationships towards co-operative relationships. While it is important that clients lead this development, it is equally important that the construction industry as a whole support this leadership. Organisations who normally fill the role of head contractor have much to contribute and much to gain by the improvement of procurement systems.
Contracting is a competitive industry and this competition has underpinned the development of the industry. However there is also much to be gained from co-operation. The development of methodologies to allow competition and co-operation to co-exist will assist the future development of the construction industry. This has the potential to be more effective when this co-operation includes clients. The innovative approach used for the construction of the Woodford Correctional Centre clearly demonstrates the benefits associated with a co-operative approach to project development. With further development, this model can improve results for all project stakeholders.

REFERENCES

Hampson, K.D. (1997) *Construction Innovation in the Australian Context*. National Research Council, Canada Institute for Research in Construction, Montreal, January.

Public Works Committee (PWC) (1996) *Construction of the new Woodford Correctional Centre*. Legislative Assembly of Queensland, Report No. 34, Brisbane.

Zaheeruddin, M. (1994) *Performance of Project Procurement Methods in the Queensland Construction Industry*. Unpublished Dissertation for a Master of Project Management degree, School of Construction Management, Queensland University of Technology, Brisbane, June.